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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/923,627	08/07/2001	Akira Tagawa	70840/56,373	2079
21874	7590	06/15/2004	EXAMINER	
EDWARDS & ANGELL, LLP			SAID, MANSOUR M	
P.O. BOX 55874			ART UNIT	
BOSTON, MA 02205			PAPER NUMBER	
			2673	16

DATE MAILED: 06/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/923,627

Applicant(s)

TAGAWA ET AL.

Examiner

MANSOUR M SAID

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-19 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-7, 9-13 and 20 is/are rejected.
- 7) ☒ Claim(s) 4 and 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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## **DETAILED ACTION**

### ***Response to Amendment***

1. This office action is in respond to the reconsideration filed on March 19, 2004, and new claims (9-15) have been added.

2. Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim 1 contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claimed limitation such as “switched ON-OFF exactly” is not supported in specification. The closest part of the specification that it pertains such limitation is described in specification page 23, lines 20-24 and abstract, which do not support the previously stated limitation.

Claims 2-13 are rejected due to their dependency on previously rejected claim 1.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1-3, 5-7 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ge et al. (5,402,143; hereinafter referred to as Ge) in view of Tanabe Eizo (JP 60-297,466; hereinafter referred to as Tanabe).**

As to claim 1, as best understood, Ge teaches an image display apparatus (liquid crystal display apparatus) (column 1, lines 9-17), comprising a display section including picture elements (pixel)) for modulating light transmission or reflection (figure 2 and column 6, lines 1-18; a driving section (display control unit, (figure 2, (104)) for performing an addressing scan of the picture elements in such a manner as to successively change light modulation states of the picture elements in each display frame (figure 10, shows the light intensity in each frame), (figure 2, 10; column 6, lines 16-30; column 10, lines 23-43 and column 11, lines 22-39) ; and a light emitting section for illuminating the display section (column 1, lines 9-17), wherein the light emitting section is switches ON-OFF exactly once in each display frame (figure 10, shows the light intensity being ON/OFF in each frame ), (figure 10; column 6, lines 34-41; column 10,

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lines 44-53 and column 11, lines 18-21), the addressing scan for the picture elements is performed in the OFF state of the light emitting section in each display frame (figure 10, shows the addressing scan is performed in the OFF state in each frame) (figure 10, column 40-44; column 10, lines 44-64 and column 11, lines 43-45).

Ge does not expressly disclose that the sequence of the addressing scan is reversing every one or more display frame.

However, Tanabe teaches that the sequence of the addressing scan is reversing every one or more display frame (figures 1 and abstract).

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to incorporate Tanabe's device teaching an reversed addressing scan into Ge's device so to obtain a homogeneous liquid crystal image (abstract).

**As to claim 2,** Tanabe teaches that the sequence of the addressing scan of the picture elements is reversed every display frame (figure 1 and abstract).

**As to claim 3,** Tanabe teaches that the addressing scan of the picture elements is performed on every picture element on a scanning line (column 6, lines 1-3, column 6, lines 14-19 and column 11, lines 40-51).

7. Claims 5-7 & 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ge in view of Tanabe as applied to claim 1 above, and further in view of Yoshihara et al. (6,115,016; hereinafter referred to as Yoshihara).

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As to claim 5, Ge and Tanabe teach all claimed limitations except that Yoshihara teaches that a frame period of each display frame is about 1/60 second (column 4, lines 42-50 and column 5, lines 33-42).

However, Yoshihara teaches wherein a frame period of each display frame is about 1/60 second (column 4, lines 42-50 and column 5, lines 33-42).

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to combine Yoshihara's device teaching each display frame in about 1/60 into Ge's modified system so that the entire intensity can be improved by selecting a desired measure as the occasion demands (column 39-42).

As to claim 6, Yoshihara (figures 3 and 4) teaches wherein in each display frame, an ON-state period of the light emitting section is less than or equal to about 50% of a frame period (column 2, line 60 through column 3, line 15; and column 6, lines 41-67 and column 7, lines 43).

As to claim 7, Ge teaches wherein the light modulation states of all of the picture elements are reset before the start of the addressing scan of the picture elements in the display section (figures 2 & 10-11 and column 10, lines 24-30)

As to claim 9, Yoshihara discloses that each picture element includes a liquid crystal element (figures 1-5, abstract, column 2, lines 26-42 and column 8, lines 17-67).

As to claim 10, Yoshihara teaches wherein the light modulation state of each picture element is controlled by an active element (figures 1-5, abstract, column 2, lines 26-42 and column 8, lines 17-67).

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8. **Claims 11-13 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ge in view of Tanabe as applied to claim 1 above, and further in view of Hoshino (6,317,181 B1).**

As to claims 11 and 20, Ge and Tanabe disclose all claimed limitation in claim 12 except that the light emitting section is cold cathode tube.

However, Hoshino (figures 1, 6-10 and 12) disclose the light emitting (4) section is cold cathode tube (column 5, lines 22-33).

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to combine Hoshino's lcd display having a cold cathode tube light into Ge's modified device so as to provide a liquid crystal display panel capable of indicating sufficiently visible display even at dark locations whereon or little external light is available, and offering novelty and variation in design while ensuring a long service life of a battery used therein (column 30-38).

As to claim 12, Hoshino (figures 1, 6-10 and 12) teaches wherein the light emitting section (4) is an electroluminescent element (column 5, lines 22-33).

As to claim 13, Hoshino (figures 1, 6-10 and 12) teaches that the light emitting section (4) is a light emitting diode (column 5, lines 22-33) (abstract, column 1, lines 5-11, column 2, lines 1-10 and column 2, lines 28-45).

***Allowable Subject Matter***

9. Claims 14-19 are allowed.

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10. The following is an examiner's statement of reasons for allowance:

11. None of the prior art of the record either singularly or in combination teaches or fairly suggest wherein the light emitting section is switched ON-OFF once in each display frame, the addressing scan for the picture elements is performed in the OFF state of the light emitting section in each display frame, and the sequence of the addressing scan is reversed every one or more display frames; wherein each display frame includes successive first and second periods, in the first period, the addressing scan for changing the light modulation states of the picture elements is performed and the light emitting section is an OFF state, and in the second period, the addressing scan is not performed and the light emitting section is in an ON state; and wherein the light modulation states of all of the picture elements are reset during the first period of each display frame.

**12. Claims 4-8 are would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.**

The following is an examiner's statement of reasons for allowance:

None of the prior art of the record either singularly or in combination teaches or fairly suggest wherein each display frame includes successive first and second periods, in the first period, the addressing scan for changing the light modulation states of the picture elements is performed and the light emitting section is an OFF state, and in the second period, the addressing scan is not performed and the light emitting section is in an ON state; and wherein the light



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modulation states of all of the picture elements are reset during the first period of each display frame.

***Conclusion***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Mansour M. Said** whose telephone number is **(703) 306-5411**.

The examiner can normally be reached on Monday through Thursday from 8:30 a.m. to 6:00 p.m. The examiner can also be reached on alternate Friday from 8:30 a.m. to 5:00 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Shalwala Bipin**, can be reached at **(703) 305-4938**.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist)

14. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer service Office whose telephone number is **(703) 306-0377**.

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June 3, 2004

**Mansour M. Said**

A handwritten signature in black ink, appearing to read 'B. Shalwala', with a stylized flourish at the end.

**BIPIN SHALWALA**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**